

REMARKS

By this amendment, claims 1, 3-14, 16-17 and 21-30 are pending in the application.

Rejection Under 35 U.S.C. §103

1. The Examiner rejected claims 1, 3, 4-8, 12-14, 16, 21-22, 24 and 27-30 under 35 U.S.C. §103(a) as being unpatentable over Wu et al. (US 2003/0192646 A) hereinafter "Wu et al."

An obviousness rejection requires that the cited reference(s) teach or suggest all of the elements of the claim in question:

To establish obviousness, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Claim 1

Claim 1 is to a magnet assembly for a plasma process chamber. The magnet assembly comprises a hollow collar comprising a cross-section that is absent seams. The collar has an open end face and the collar is sized to be capable of diametrically expanding to snap fit a wall of the process chamber. The magnet assembly further comprises a cap to seal the open end face and a plurality of magnets in the hollow collar. The magnets are insertable through the open end face.

Claim 1 is patentable over Wu et al. because Wu et al. does not teach or suggest all the limitations of claim 1. As admitted by the Office Action, "Wu et al. fail[s]

to specifically state that the collar 140 is sized to be capable of diametrically expanding to snap fit a wall or liner of the process chamber 100.” However, Wu et al. also does not *suggest* a need for an annular housing that diametrically expands as recited in the claim. Nor does Wu et al. teach or suggest an annular housing that is sized to snap-fit a wall of a process chamber. Nowhere does Wu et al. teach such a structure or motivate derivation of the same. Thus Wu et al. simply does not provide any motivation to derive a diametrically expandable snap fit structure to hold magnets as claimed.

The Office Action argues that it would have been obvious to one of ordinary skill in the art to come up with the claimed features; however, Applicant respectfully disagrees. A fixed diameter structure does not suggest a structure having a flexible diameter or snap-fit structure. Moreover, the claimed flexible structure would not be motivated by teachings that a fixed diameter structure is adequate, as the flexible diameter structure requires more careful design work and thought as to where or what structure in the chamber the claimed structure would be snap fitted to.

It would appear that the Office Action is deriving the invention based on the elegant simplicity of Applicant’s solution. However, obviousness rejections cannot be based on impermissible hindsight:

To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher. W.L. Gore & Assocs., Inc. v. Garlock, Inc., 220 USPQ303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). That an inventor has probed the strengths and weaknesses of the prior art and discovered an improvement that escaped those who came before is indicative of unobviousness [sic], not obviousness. Fromson v. Anitec Printing Plates, Inc., 45 USPQ 2d 1269, 1276(Fed. Cir. 1997), cert. denied, 525 U.S. 817 (1998).

That the cited reference does not teach or motivate a collar as in claim 1, which is sized

to be capable of diametrically expanding to snap fit a wall or liner of a process chamber, is indicative of the nonobviousness of the invention. Nor has the Office Action demonstrated that a snap fit structure based on the teachings of the cited reference, and which has a magnet assembly would operate as described in claim 1.

Further, in assessing nonobviousness, a claimed invention must be considered as a whole:

In making the assessment of differences between the prior art and the claimed subject matter, section 103 specifically requires consideration of the claimed invention 'as a whole.' Princeton Biochemicals, Inc. v. Beckman Coulter, Inc. (Fed. Cir., No. 04-1493, 6/9/05).

The Office Action is ignoring the language of claim taken as a *whole* as Wu et al. also fails to teach or suggest other claimed elements, for example, the hollow collar having an open end face, a cap to seal the open end face and magnets being insertable through the open end face, as claimed in claim 1. Instead, Wu et al. teaches:

...as shown in FIG. 3, an annular housing 140 having a radially outward face 132 and a radially inwardly facing opening 130, a cover plate 120 to seal the radially inwardly facing opening 130, and a plurality of magnets 150 in the annular housing 140. The radially inward facing opening 130 is sized to allow insertion of the magnets into the housing 140. (Wu et al., page 3, para. 0049, lines 2-8.)

In fact, Wu et al. *teaches away* from the present invention because instead of inserting the magnets through an open end face that is then sealed with a cap, Wu et al. teaches a radially inward opening about a mid-section of the annular housing. The radially inward facing opening has a "cover plate joined to the housing 140...by being welded or soldered". (Wu et al., page 3, para. 0051, lines 1-3.) Thus Wu et al. also does not teach a hollow collar having an open end face, a cap to seal the open end face and magnets being insertable through the open end face, as claimed in claim 1.

Thus, for at least these reasons, Wu et al. does not render obvious claim 1 or the claims dependent therefrom.

Claim 21

Claim 21 is also to a magnet assembly for a plasma process chamber. The magnet assembly comprises a hollow collar comprising a cross-section that is absent seams, the collar having an open end face, and the collar sized to be capable of diametrically expanding to snap fit a groove of a liner of the process chamber. There is a cap to seal the open end face. A plurality of magnets are positioned in the hollow collar such that the magnetic axes of the magnets are oriented perpendicular to a wall of the process chamber. The magnet assembly further comprises a retaining ring to retain the hollow collar in the groove of the liner of the process chamber.

Wu et al. does not teach or suggest all the limitations of claim 21. For example, as discussed above, Wu et al. does not teach or suggest a collar sized to be capable of diametrically expanding to snap fit a wall or liner of a process chamber. Further, it would require impermissible hindsight based upon Applicant's own disclosure for one of ordinary skill in the art to come up with such a limitation in combination with the other limitations of claim 21; taking the invention as a whole. Evidence of such can be drawn from the fact that no reference or combination of references has been cited that either teach or suggest the collar sized to be capable of diametrically expanding to snap fit a wall or liner of a process chamber.

Wu et al. also does not teach or suggest a collar having an open end face and a cap to seal the open end face. As also discussed above, in contrast to an open end face, Wu et al. teaches the annular housing having a radially inward opening about the midsection of the housing. (Wu et al., Figures 3 and 5.) Instead of a cap to seal the open end face, such as with epoxy (Specification, page 10, lines 34-35), Wu et al. teaches a "cover plate joined to the housing 140...by being welded or soldered". (Wu et al., page 3, para. 0051, lines 1-3.) The cover plate covers the radially inward opening about the midsection of the housing as opposed to an *end* face.

The Examiner argues that “[i]t is conventionally known in the art to use a retaining ring or key to hold components securely intact” and therefore that “it would have been obvious to one of ordinary skill in the art at the time of the invention to use a retaining ring or key in the chamber of Wu et al. in order to ensure that the hollow collar is securely held to the wall.” To this, Applicant emphasizes that the claim must be considered as a *whole* and without the benefit of impermissible hindsight. It is not obvious to combine a retaining ring or key specifically with the magnet assembly of claim 21, which includes all of the elements of claim 21, because there is not motivation in Wu et al. to do so, nor has a combination of references been cited to indicate such. Had the combination of the elements in claim 21 been obvious, it would have been suggested or motivated by prior art.

Therefore, for at least these reasons, Wu et al. does not render obvious claim 21 or the claims dependent therefrom.

Claim 24

Claim 24 recites, inter alia, a hollow collar having an open end face, the collar sized to be capable of diametrically expanding to snap fit a groove of a liner of the process chamber, a cap to seal the open end face, and a key on the external surface of the hollow collar to couple to a corresponding slot on the surface of the liner of the process chamber.

As discussed above, Wu et al. neither teaches nor suggests a hollow collar having an open end face nor a cap to seal the open end face. Instead, as discussed above, Wu et al. teaches a radially inward opening about the midsection of the housing along with a welded cover plate to seal the opening. Further, as presented above, Wu et al. does not teach or suggest a collar sized to be capable of diametrically expanding to snap fit a wall or liner of a process chamber or a *groove* of a liner of a process chamber. This, nor the key on the external surface of the hollow collar to

couple to a corresponding slot on the surface of the liner of the process chamber, is obvious to one of ordinary skill in the art because the invention must be considered as a whole and not merely by hindsight based upon Applicant's disclosure. The combined elements of claim 24 are not obvious to one of ordinary skill in the art and that the cited reference does not teach the claimed combination is evidence of the claim's nonobviousness.

Thus, for at least these reasons, Wu et al. does not render obvious claim 24 or the claims dependent therefrom.

Claim 27

Claim 27 is to a liner assembly for a process chamber. The chamber comprises a liner having a groove and a magnet assembly comprising a hollow collar comprising a cross-section that is absent seams, the collar having an open end face, and the collar sized to be capable of diametrically expanding to snap fit the groove of the liner; a cap to seal the open end face; and a plurality of magnets in the hollow collar, the magnets being insertable through the open end face.

Claim 27 is patentable over Wu et al. for at least the reasons set forth above with respect to claim 1 and claim 24. Therefore, Wu et al. does not render obvious claim 27 or the claims dependent therefrom.

2. The Examiner rejected claims 9-11, 17, 23 and 25-26 under 35 U.S.C. §103(a) as being unpatentable over Wu et al. in view of Quiles et al. (WO 01/91164) hereinafter "Quiles et al."

Claim 9 depends on claim 8 which depends on independent claim 1. Claims 10-11 depend on claim 9 which indirectly depends on claim 1. Claim 17

depends on claim 16 which depends on claim 1.

As discussed above, claim 1 is patentable over Wu et al. because Wu et al. does not teach or suggest a hollow collar having an open end face...the collar sized to be capable of diametrically expanding to snap fit a wall of the process chamber...a cap to seal the open end face, as claimed in claim 1, nor is the combinations of such limitations obvious to one of ordinary skill in the art.

However, Quiles et al. fails to make up for the deficiencies of Wu et al. because Quiles et al. also does not teach or suggest such limitations. Instead, Quiles et al. teaches:

The set of three magnets includes a pair of magnets 182, 184 connected by a steel bar 186 is housed within the interior region 132 of the wafer support 130, and is preferably attached to the interior surface of the wall 134 of the workpiece support 130...On the opposite side of the pumping annulus 140 and facing the center of the horseshoe magnet is the third magnet, namely a single individual magnet 188 which is attached to the outer surface of the side wall 110. The three magnets 182, 184, 188 constitute what is referred to in this specification as a tri-magnet apparatus.

(Quiles et al., page 6, lines 21-29.)

Thus, the combination of Wu et al. and Quiles et al. does not teach or suggest all of the limitations of claim 1. Therefore, for at least these reasons, claim 1 and the claims dependent directly of indirectly therefrom are patentable over Quiles et al.

Claim 23 depends on claim 21. As discussed above, claim 21 is patentable over Wu et al. because Wu et al. does not teach all of the elements of claim 21, such as, for example, a hollow collar having an open end face, the collar sized to be capable of diametrically expanding to snap fit a groove of a liner of the process

chamber, a cap to seal the open end face and a retaining ring to retain the hollow collar in the groove of the liner of the process chamber. Further, it is impermissible to use hindsight to establish that one of ordinary skill in the art could come up with the combination of the elements recited in claim 21, especially since no one else has done so thus far, given the cited references. For reasons presented above, Quiles et al. fails to make up for the deficiencies of Wu et. al. because Quiles et al. also does not teach or suggest such limitations. Thus, the combination of Wu et al. and Quiles et al. does not teach or suggest all of the limitations of claim 21. Therefore, claim 21 and the claims dependent directly or indirectly therefrom are patentable over Quiles et al.

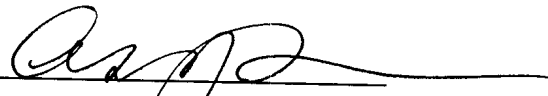
Claim 25 depends on claim 24. Claim 26 depends on claim 25 which depends on claim 24. Wu et al. does not teach or suggest all the limitations of claim 24, such as, for example, a hollow collar having an open end face, the collar sized to be capable of diametrically expanding to snap fit a groove of a liner of the process chamber, a cap to seal the open end face, and a key on the external surface of the hollow collar to couple to a corresponding slot on the surface of the liner of the process chamber. Also, as discussed above, such limitations are not obvious to one of ordinary skill in the art, nor does Quiles et al. make up for the deficiencies. Therefore, claim 24 and the claims dependent directly or indirectly therefrom are patentable over Quiles et al.

CONCLUSION

The above-discussed amendments are believed to place the present application in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to telephone Applicant's representative at the number listed below.

Respectfully submitted,
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